

## **REMARKS**

Claims 17 and 18 have been amended. Claims 1-27 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

### **Claim Objection:**

The Examiner objected to claim 17 because it states “the computer-readable medium of claim 10” while claim 10 states “a computer-readable storage medium.” Claim 17 has been amended to read, “the computer-readable storage medium of claim 10.” Withdrawal of the objection is respectfully requested.

### **Section 103(a) Rejection:**

The Examiner rejected claims 1-27 under 35 U.S.C. § 103(a) as being unpatentable over Mangipudi et al. (U.S. Patent 6,728,748) (hereinafter “Mangipudi”) in view of Lin et al. (U.S. Patent 6,463,068) (hereinafter “Lin”). Applicant respectfully traverses this rejection for at least the reasons presented below.

**Regarding claim 1, Mangipudi in view of Lin does not teach or suggest propagating said quality of service context with said request in the server system, wherein said propagating comprises sending data indicating the quality of service context with the request.** The Examiner admits that Mangipudi does not teach sending data indicating a quality of service context with the request. The Examiner relies on Lin, citing column 3, lines 12-25, to teach sending data indicating a quality of service context with a request. Lin teaches including a Class of Service (COS) identifier field in the header of a request packet. However, Mangipudi teaches that a class of service is defined for an incoming request and based on that class of service, the request will be forwarded to a particular server machine (Mangipudi, column 5, lines 36-43; column 6, lines 9-10; column 7, lines 60-64; column 7, line 67- column 8, line 5). Mangipudi’s servers are grouped and classified according to the class of service provided by each server.

Mangipudi's router delivers requests to an appropriate server. Mangipudi further teaches that the router may also direct a request to a different server, in the same group of servers, for load-balancing purposes. *See* Mangipudi, column 9, lines 25-44 and column 10, lines 25-31.

Since in Mangipudi's system, the same router that determines and assigns a class of service also routes the request to a particular server, Mangipudi clearly teaches away from propagating a quality of service context with a request. It would not be necessary (or even useful) for the router in Mangipudi to propagate a quality of service context with the request because the request is already routed to the correct server for the assigned class. Mangipudi's router simply sends the request to a server for the assigned class of service. The servers in Mangipudi are already assigned to a specific class and requests are directly routed to the appropriate server group. It would serve no purpose and make no sense in Mangipudi's system to send data indicating a quality of service context with the request.

The intended operation of Mangipudi's system is for the router to determine a class of service and send the request to the appropriate server dependent on the class of service. This operation clearly does not require or suggest that any indication of a quality of service context be propagated with the request including sending data indicating the quality of service context with the request. Mangipudi does not mention that the back-end server in any way requires, uses or would benefit from receiving an indication of the assigned class of service. Instead, Mangipudi teaches that each cluster or group of servers can be designated with a particular class of service and that, based on this class, a request will be directed to one of the clusters. *See*, Mangipudi, column 9, lines 53-55. Thus, as noted above, Mangipudi teaches assigning an incoming request a particular class, and based on that class, forwarding the request to a particular server or cluster. Since the receiving server is already designated by the particular class of service and since the requests forwarded to that server are also assigned the same class of service, not only is there no need to propagate a quality of service context with a request in Mangipudi's system, it would serve no purpose. Thus, one of ordinary skill in the art

would not modify Mangipudi's system according to Lin in the manner proposed by the Examiner.

In the Response to Arguments section of the Office Action dated April 9, 2007, the Examiner disagrees with the above arguments. It appears that the Examiner has misinterpreted the Applicant's statement, "Mangipudi teaches that a class of service is defined for an incoming request and based on that class of service, the request will be forwarded to a particular server machine." The Examiner asserts, "This meets the limitation of propagating a quality of service context with a request." **This is incorrect.** Applicant's statement does not say the quality of service context is forwarded with a request, only that the request itself (which does not include any indication of the quality of service context) is forwarded to a particular machine. The context as taught by Mangipudi is used to classify a request (but is not included in the request) in order to determine to which machine the request should be forwarded. Mangipudi does not teach nor suggest nor have any reason to send an indication of the quality of service context with the request because the Mangipudi's router directs the request to the right class. The server that receives the request is already part of the correct class and handles all requests it receives according to that class. Thus, the server receiving the request in Mangipudi has no need for any quality of service context to be included with the request. Thus, the Examiner's proposed modification of Mangipudi according to Lin makes no sense.

**Furthermore, the Examiner has not provided a proper reason to combine Mangipudi and Lin.** The Examiner argues that the combination of Mangipudi and Lin "satisfies the need for a routing system that can be flexibly designed and implemented and that ensures that users are directed to web servers and content commensurate with their service levels." However, the Examiner's statement merely reflects the benefits of Mangipudi's own system and does not provide any reason to propagate a quality of service context with a request that has already been routed to the correct server class. In fact, the Examiner's statement quoted above regarding motivation to combine Mangipudi and Lin, was taken from Mangipudi, column 6, lines 32-34. As described in this passage, the system of Mangipudi already ensures that users are directed to web servers and

content commensurate with their service levels, without the Examiner's suggested modification. Thus, the portion of Mangipudi cited by the Examiner actually shows that one of ordinary skill in the art would not have any reason to modify Mangipudi according to Lin.

Moreover, the Examiner's statement of reason to combine Mangipudi and Lin merely refers to benefits provided by any system that includes "routing by class" as taught by Mangipudi. In fact, one seeking "to ensure that users are directed to web servers and content commensurate with their service levels" could simply use Mangipudi's system since Mangipudi's system provides that benefit via a router that directs requests to a particular server or a particular server cluster based on a determined class of service. There would be no need to modify Mangipudi to obtain the Examiner's suggested benefit. As discussed above, there is no need or motivation for the router in Mangipudi to propagate a quality of service context with the request, either using the COS tags of Lin or otherwise. Instead, the router simply sends the request to a server for the assigned class of service.

In paragraph 19 of the Response to Arguments section of the present Office Action, the Examiner states, "Providing class of service tags as taught by Lin is seen as another way to ensure that users are directed to web servers and content commensurate with their service levels" (emphasis added). However, as discussed above, the system of Mangipudi already ensures this, and there would be no benefit to providing another way, as the Examiner suggests. Changing the class-based routing system of Mangipudi would change Mangipudi's principle of operation. If a proposed modification would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143.01.VI; *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

**In addition, Lin does not teach directing users to web servers or content based on the class of service tags, as suggested by the Examiner.** Rather, Lin teaches using the class of service tags as part of an algorithm to determine whether or not to

retain or discard particular packets in a network router or switch based on minimum and maximum thresholds associated with the classes of service. For example, Lin states in the Abstract:

A router includes a classifier that classifies packets assigned to  $2^{(n-m)}$  classes of service into  $2^m$  classes of service that are supported by the router. The classifier then sets the loss priorities of the respective packets to one of  $m$  levels. The router uses a modified weighted random early detection scheme that is based on probabilities of discard associated with  $2^{(n+m)}$  classes of service to determine whether to retain or discard particular packets.

Further, as stated above, there is no reason for the router in Mangipudi to propagate a quality of service context with the request because the request is already routed to the correct server for the assigned class of service. The evidence of record does not provide any reason for the server to require (or even use) such an indication of a quality of service context. Therefore there would have been no motivation to combine Lin and Mangipudi. Mangipudi's router is designed to send the request to a server for the assigned class of service without any such modification.

For at least the reasons above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks apply to claims 10 and 19 as well.

**Regarding claim 7, Mangipudi in view of Lin fails to teach or suggest inserting the quality of service context adjacent to at least one of a security and transaction context as part of propagating the quality of service context with said request.** The Examiner cites column 10, lines 21-25 of Mangipudi. **However, the cited passage makes absolutely no mention of inserting a quality of service context adjacent to at least one of a security and transaction context.** Instead, the cited passage only states that classification of traffic based on Mangipudi's techniques allows for differentiation of service and prioritization of revenue generating transactions versus non-revenue generating transactions. Mangipudi, even if combined with Lin, does not teach inserting a quality of service context adjacent to at least one of a security and transaction context. The mere fact that Mangipudi teaches a system in which a client's

class of service may be based on a transaction and or an authentication process does not disclose *inserting* a quality of service context *adjacent* to a security and/or transaction context *as part of propagating the quality of service context with said request*. The Examiner has clearly misinterpreted the teachings of Mangipudi in view of Lin and failed to consider the specific language and limitation of Applicant's claim.

Lin, whether considered singly or in combination with Mangipudi, also fails to teach or suggest the limitations of claim 7. Lin, even in light of Mangipudi, does not describe inserting a quality of service context adjacent to at least one of a security and transaction context. Instead, Lin only describes having a class of service (COS) identifier field in packet headers.

In paragraph 20 of the Response to Arguments section of the present Office Action, the Examiner states that the combination of Mangipudi and Lin discloses inserting a quality of service context adjacent to at least one of a security and transaction context as recited in claim 7. The Examiner asserts, "The previous line citation to Mangipudi, column 10, lines 21-21, shows transaction prioritization used in conjunction with the class of service parameters. This meets the limitation of an adjacent transaction context. As recited in claim 7." **This is incorrect.** Mangipudi does not teach the prioritized transaction information is inserted in the quality of service context or propagated. Instead, Mangipudi uses the prioritization for classifying traffic before it is routed to the correct machine. (Column 10, line 21.) The Examiner also relies on column 13, lines 28-41 as reciting the limitations of claim 7. However, this citation deals with tracking and computing SLA metrics regarding the performance of web servers based on transactions tied to specific classes for the purpose of rebalancing server assignments for affected classes. There would be no reason to insert any of the metric data into a quality of service context because the metric data is only used to rebalance server assignments. None of these metrics are inserted in the quality of service context, and they have nothing to do with the limitations of claim 7, in which "**said propagating includes inserting said quality of service context adjacent to at least one of a security and transaction context.**" The Examiner finally refers to Column 9, lines 58-67 of

Mangipudi as teaching a security context. Mangipudi states in Column 9, 58-61, “If authentication is enabled, then class of service (i.e. class) is implemented as a function of the user, and the user is authenticated and the respective class is assigned.” This citation teaches user authentication and the determination of a class based on an authenticated user, but teaches nothing about inserting such information adjacent to a quality of service context (or vice versa). Neither Mangipudi nor Lin, separately or in combination teach or suggest inserting a quality of service context in the request, propagating a security context adjacent to a quality of service context or propagating a quality of service context at all.

In paragraph 21 of the Response to Arguments section, the Examiner states, “The applicant has gone on to argue that the claim is distinguished based on the word inserting. However, the inserting is not further described in the claim so as to show how it differentiates from the prior art.” The Applicant points out that claim 7 is dependent on claim 1 which describes **propagating said quality of service context with said request in the server system, wherein said propagating comprises sending data indicating the quality of service context with the request**. Therefore, the claims, taken together, require that the quality of service context be inserted adjacent to a security and/or transaction context as part of the data sent with the request to propagate it. Applicant asserts claim 7 is distinguished from the prior art in that the prior art does not teach sending data with the request indicating a **quality of service context and at least one of a security and transaction context**. Lin only describes having a class of service (COS) identifier field in headers, not **inserting said quality of service context adjacent to at least one of a security and transaction context as part of propagating said quality of service context with said request in the server system, wherein said propagating comprises ending data indicating the quality of service context with the request**.

Thus, the rejection of claim 7 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks apply also to claims 16 and 25.

Regarding claim 9, Mangipudi in view of Lin fails to teach or suggest wherein a request manager service dispatches the request including the quality of service context to a software component in a plurality of software components, based on the quality of service context. The Examiner cites column 10, lines 25–31 and column 7, line 56 through column 8, line 18 of Mangipudi. However, the cited passage of Mangipudi does not refer to dispatching a request including a quality of service context to a software component in a plurality of software components based on the quality of service context. Instead, the cited passage describes selecting a particular “back-end server machine” depending upon a load balancing algorithm or a class of service assigned to the request. Mangipudi states, “The specific back-end server machine selected for a classified request will depend upon the load balancing algorithm defined for the cluster or class assigned to the request, and the request will be load-balanced to the particular back-end server.” (Column 10, lines 25-30) Mangipudi does not, even if considered in combination with Lin, teach or suggest dispatching a request to a particular software component based on a quality of service context included in the request. Mangipudi describes selecting a different machine based on a class of service assigned to a request, but does not mention anything regarding dispatching a request to a particular software component based on a quality of service context included in the request.

In the Response to Arguments section of the Office Action dated April 9, 2007, paragraph 22, the Examiner asserts, “the combination of Mangipudi and Lin does disclose dispatching said request to a software component as recited in claim 9.” The Examiner further argues, “In fact, Mangipudi’s whole server system is based on the functionality of distributed software processes. In order for the back-end server to receive the forwarded request it must utilize particular software components.” (Mangipudi, column 7, line 56 through column 8, line 18.) The referred to citation in Mangipudi describes packet level load balancing implemented in a routing host. Applicant asserts the citations do not teach **wherein a request manager service dispatches said request including said quality of service context, to a software component in a plurality of software components, based on said quality of service context**. Mangipudi does not teach a quality of service context included in the request.

Lin also fails to teach or suggest the limitations of claim 9 and therefore does not overcome Mangipudi failure to teach or suggest **wherein a request manager service dispatches the request including the quality of service context to a software component in a plurality of software components, based on the quality of service context** noted above.

For at least the reasons above, the rejection of claim 9 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks also apply to claims 18 and 27.

Applicant also asserts that the rejection of numerous other ones of the dependent claims is further unsupported by the cited art. However, since the rejection of the independent claims has been shown to be improper, a further discussion of the rejection of the dependent claims is not necessary at this time.

## CONCLUSION

Applicant respectfully submits that the application is in condition for allowance, and prompt notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-90800/RCK.

Respectfully submitted,

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